

REMARKS

Claims 2, 3, 5, 7, 9, 10, 12 to 14 and 17 to 25 continue to be in the application.

Claims 15 and 16 are being cancelled.

New claims 26 and 27 are being introduced.

New claim 26 is based on the language of claims 5, 15 and 16.

New claim 27 is based on the language of claim 3 and the specification, page 5, lines 31 and 32.

Claim 21 is being amended based on the specification, page 6, lines 16 to 19.

The Office Action refers to Claim Rejections - 35 USC § 103

4. Claims 2, 7, 9, 10, 12-15, 17-22, & 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gruhler (U.S. Patent 4924598) in view of Kaburagi et al. (U.S. Patent 5434602).

Applicant respectfully traverses.

A thickness measurement ytem for pharmaceutical objects such as tablets, pills or oblong is disclosed. A movable carriage supports a magnetic belt for defining a position and a projecting arm for touching an object for measuring thickness. The invention is particularly

suitable for an automatic measurement of the thickness of pharmaceutical objects such as tablets, pills or oblongs.

With reference to claims 2, 9, 10, 12-15, 19, 20, 22, & 24, Gruhler discloses a device and method of using for measuring the thickness of objects comprising a base (30) from which a column (1) rises vertically with a placement surface for the object (X, see below),

whereby a length-measuring system is arranged along the column comprising a continuously looped belt (5) mounted along the column on a carriage (3) (Figure 1) along a groove/guide (2) & rollers (6,7) (Figures 1 & 10); moved along the column by means of an electric motor (10) (Figure 2), while a projecting arm (4) engages the belt being able to accompany the movement of the belt for making contact with the object to be measured (Figure 1).

Applicant respectfully disagrees. The device taught by the reference Gruhler is a "Height Measuring Instrument" and not a device for measuring thickness and length. Therefore, the device of the present application is clearly measuring different properties when compared to the properties measured by the instrument of the reference Gruhler.

While the reference Gruhler fails to name the object subjected to height measurement, the present application and claims specify on page 2, line 31 to page 3, line 1, that a device is furnished for measuring the thickness and/or the length of objects having a solid or gel-like consistency, especially pharmaceutical objects such as tablets, pills or oblongs. The teaching of a measuring pin (4) by the Gruhler reference, column 4, line 24 is a clear indication that the instrument of the Gruhler

reference is not intended and not suitable for measuring the thickness and/or the length of objects having a solid or gel-like consistency, especially pharmaceutical objects such as tablets, pills or oblongs in contrast to the present invention. The measuring pin (4) of the reference Gruhler is incapable of holding tablets, pills or oblongs in a reproducible measurement position, since tablets, pills and oblongs will roll off from the measuring pin (4) of the Gruhler reference. Therefore, a person of ordinary skill in the art looking for measuring tablets, pills, or oblongs would avoid the instrument of the reference Gruhler, since the construction of the Gruhler reference does not allow to hold tablets, pills and oblongs in a defined measurement position.

The Office Action alleges that the reference Gruhler teaches “a projecting arm (4)”. The reference Gruhler itself refers to the element (4) as a measuring pin (4). Therefore, the element (4) of the Gruhler reference is defined as a measuring pin. Such measuring pin (4) of the Gruhler reference is definitely unsuitable for measuring the thickness and/or the length of objects having a solid or gel-like consistency, especially pharmaceutical objects such as tablets, pills or oblongs. A person of ordinary skill in the art would not have employed the teaching of the reference Gruhler to measure the thickness and/or the length of objects having a solid or gel-like consistency, especially pharmaceutical objects such as tablets, pills or oblongs. In contrast to the pin (4) of the Gruhler reference, claim 19 requires the presence of a projecting arm (10, 21)

forming a stop jaw, which is patentably different from a construction involving the pin (4).

The reference Gruhler teaches in column 4, line 22 “a guide or guiding mechanism 2”. In contrast, applicant requires in claim 27 “a groove (3) disposed inside the column (2) and lengthwise milled into the column, wherein the carriage (4) is secured and running in the groove (3) such as to be movable up and down or back and forth.”. Thus Applicant specifies clearly the disposition of the groove (3) in the column (2) as well as the securing and running of the carriage (4) in the groove (3).

Gruhler does not disclose the belt is magnetic and provided with a plurality of pole pitches, with a stationary magnetic field sensor having an electric evaluation circuit on the base.

Kaburagi et al. discloses a recording apparatus with a magnetic linear encoder in the embodiment shown in Figure 60 with a looped scale (733) with pole pitches (col. 28 line 27) sensed by a stationary magnetic sensor (737) and a counting circuit (739) in order to read information on said scale without hindering any other component (col. 28 lines 36-40) and detect the speed and position of the carriage (732) (col. 28 lines 48-50).

Applicant respectfully disagrees.

The reference Kaburagi et al. in column 28, lines 28 through 36 writes: “An end of the scale 733 is fixed to a carriage 732, which is fixed to a carriage

belt 734. Said belt 734 is supported between a driving motor 731 and a belt pulley 735, while the other end of the scale 733 is fixed on a pulley 747, which is rotatable on a shaft of the belt pulley 735. Said pulley 747 and the belt pulley 735 are elastically connected by a spring 746. As a result, the scale 733 is taken up, without slack, on the pulley 747, regardless of the movement of the carriage 732.” This section appears to be inconsistent in itself. When the scale 733 is fixed to a carriage 732, then it appears to be impossible that at the same time “the scale 733 is taken up, without slack, on the pulley 747, regardless of the movement of the carriage 732.”. It is not understood how the scale 733 is fixed to the carriage 732 and at the same time scale 733 is taken up regardless of the motion of the carriage 732.

The scale 733 does not appear to be looped in Fig.60 of the reference Kaburagi et al., but extends between the carriage 732 and the pulley 747 in contrast to the allegation of the Office Action.

The speed and position of the carriage 732 of the reference Kaburagi et al. appears to be irrelevant and need not be detected when considering the statement of the reference Kaburagi et al. that the scale 733 is taken up on the pulley 747 regardless of the movement of the carriage 732.

It is further observed that no projecting arm (10, 21) forming a stop jaw is seen in the Kaburagi et al. reference. Thus the references Gruhler and

Kaburagi et al. agree not to employ the projecting arm (10, 21) forming a stop jaw according to the claims of the present application.

Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention was made to add the pole pitches, disclosed by Kaburagi et al. to the belt, and add the sensor and counting circuit disclosed by Kaburagi et al. to the base disclosed by Gruhler in order to not only detect that

motion is occurring up or downward as Gruhler discloses (col. 6 lines 51-56), but that an absolute position value is known.

Applicant respectfully disagrees. There is no teaching in the references Gruhler and Kaburagi et al. as to a combination of the pin of the Gruhler reference and the carriage of the Kaburagi et al. reference. The Gruhler reference and the Kaburagi et al. agree not to measure length and thickness of pharmaceutical objects like tablets, pills and oblongs. The combination of the references Gruhler and Kaburagi et al. according to the Office Action is clearly based on hindsight derived from the present application.

With reference to claims 7, 17, & 18, Gruhler does not disclose a tension spring that engages an end of the carriage and the other end engages the base.

Kaburagi et al. discloses a tension spring (746) engaged with the carriage (732) (through connection to the pulleys) in order to take up the scale (733) without slack (Figure 60)(col. 28 lines 33-35).

The reference Kaburagi et al. teaches in column 28, lines 33 and 34 : “Said pulley 747 and the belt pulley 735 are elastically connected by a spring 746”. In clear contrast, claim 7 of the instant application require that “wherein the spring (26) is a tension spring that engages, on the one hand, with the end of the carriage (4) facing the base (1) and, on the other hand, with the base (1).”. While the carriage 732 of the Kaburagi et al. reference is fixed to a carriage belt 734, the end of the carriage 4 facing the base 1 of the present invention engages the tension spring 26 and the tension spring 26 engages the base 1. The construction required in claim 7 of the instant application is clearly different from the reference Kaburagi et al. and adding the reference Gruhler to Kaburagi et al. would still mean that claim 7 of the present application is still different from a combined teaching of the references Gruhler and Kaburagi et al.

Applicant further urges that the application of coaxial pulleys 735 and 747 in the Kaburagi et al. reference would not allow a combination of the Kaburagi et al. reference with the different construction of the Gruhler reference by a person of ordinary skill in the art.

Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention was made to add the tension spring disclosed by Kaburagi et al. to the rollers/carriage disclosed by Gruhler in order to take up the belt without slack.

Applicant respectfully disagrees. Adding a tension spring disposed between two pulleys from the Kaburagi et al. reference to the Gruhler reference would probably render the reference Gruhler inoperable.

With reference to claim 21, Gruhler does not disclose the lowest width of the placement area is larger than the smallest diameter of the object; wherein the width of the contact area of the contact arm is larger than the smallest diameter of the object. However, the size of the placement area and contact area, absent any criticality, are only considered to be obvious modifications of the shape of placement area and contact area disclosed by Gruhler as the courts have held that a change in size, without any criticality, is within the level of skill in the art as the particular size claimed by Applicant is nothing more than one of numerous sizes that a person having ordinary skill in the art will find obvious to provide using routine experimentation based on its suitability the intended use of the invention. See *In re Rose*, 220 F.2d 459,463, 105 USPQ 237, 240 (CCPA 1955). Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention was made to make the sizes of the placement area and contact area disclosed by Gruhler larger than the smallest diameter of the object being measured in order that the object is held in place securely when measured.

The reference Gruhler teaches a measuring pin 4 for measuring height. Height measurement discloses no placement area or contact area and refers only to a measuring pin (4). There is no teaching within the four corners of the Gruhler reference to make any changes to the pin. In

particular, there is no suggestion to change the shape of the pin (4). A person of ordinary skill in the art would certainly not change the round configuration of the measuring pin (4) without any instructions to do so.

Applicant requires in claim 21 a projecting arm (10) that extends horizontally over the placement surface (25) and that forms a stop jaw. Applicant urges that there are no teachings in the Gruhler reference to convert the measuring arm (4) into a projecting arm (10).

Claims 3, 5, 16, 23, & 25 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Gruhler & Kaburagi et al. as applied to claims 2, 7, 9, 10, 12-15, 17-22, & 24 above, and further in view of Hassell (U.S. Patent 6185832).

Applicant respectfully traverses.

Gruhler & Kaburagi et al. disclose all of the instant claimed invention as stated above in the rejection of claims 2, 7, 9, 10, 12-15, 17-22, & 24, but does not disclose the movement means has teeth into which a drive cog wheel meshes.

Hassell discloses an apparatus (15) for callipering book signatures with a toothed belt (49) and drive cog wheel (50) (Figure 7) for driving movement without slippage and to maintain proper timing (col. 5 lines 1-3).

Applicant respectfully disagrees.

The Hassell reference states in column 4, line 56 to column 4, line 66: "When the roller 41 is lifted above the back end of the measuring arm 37, the measuring arm is selectably pivoted in the opposite direction in response to the return cam 46 located beneath the back end 42 of

the measuring arm. As best seen in Fig.7, cam 46 comprises a roller 47 eccentrically mounted on one side of a pulley 48. The roller 47 extends beneath the back end of the measuring arm 37 so as to contact the underside of the measuring arm for each rotation of the pulley 48. That pulley is rotated by a drive train including a belt 49 also extending over a reset drive pulley 50 and an idler pulley 51.”.

The reference Hassell teaches that a return cam 46 pivots a measuring arm 37, that cam 46 comprises a roller 47 eccentrically mounted on the side of a pulley 48, the pulley 48 being rotated by a drive train including a belt 49 also extending over a reset drive pulley 50 and an idler pulley 51. Nothing like a cam 46 with roller 48 and eccentric roller 47 is seen in the present application or in the Gruhler reference. A person of ordinary skill in the art would not know what to do with the cam 46, the roller 47 and the pulley 48 in view of the Gruhler and Kaburagi et al. references. In addition, the belt 49 with the pulley 48, the reset drive pulley 50 and the idler pulley 51 do not fit to the Gruhler and Kaburagi et al. references.

The Hassell reference continues and states in column 4, line 66 to column 5, line 3: “The belt 49, and at least the reset drive pulley 50 and the roller pulley 48, preferably are toothed or otherwise operative to drive the pulley 48 without slippage, to maintain the proper timing of the return cam 46 as described below.”

The proposal of toothed pulley 48, belt 49, and reset drive pulley 50 does not increase the combinability of cam 46, roller 47, pulley 48,

belt 49, reset drive pulley 50 and idler pulley 51 with the Gruhler and Kaburagi et al. references. Therefore, a person of ordinary skill in the art would not make the combination of the Hassell reference with the Gruhler and Kaburagi et al. references.

The Hassell reference states in column 5, lines 49 to 52: "The reset drive pulley 50 is mounted on the cam shaft 70 and drives the the belt 49 (FIG. 7) connected to the pulley 48 that carries the roller 47 for selectively engaging the back end 42 of the measuring arm 37." The teaching of the Hassell reference that the pulley 48 carries the roller 47 for selectively engaging the back end of the measuring arm 37 clearly would lead any combination with the Gruhler and Kaburagi et al. references astray. Therefore, no pulley 48 with teeth is combinable with the teaching of the references Gruhler and Kaburagi et al. to provide the present invention.

Therefore, it was would have been obvious to one with ordinary skill in the art at the time of the invention made to add teeth to the belt and drive wheel disclosed by Gruhler & Kaburagi et al. in order to drive movement without slippage and to maintain proper timing in measurement.

There is no suggestion in the references Gruhler, Kaburagi et al. and Hassell which would lead a person with ordinary skill in the art at the time the invention was made to add teeth to a belt and drive wheel, since the

pulley 48 of the Hassell reference functions completely different from the pulleys of the Gruhler and Kaburagi et al. references.

The Office Action concludes:

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. La Vigne and Jordil et al both clearly show a measuring device with a projecting arm that is opposite a base for the object to be measured to rest on during measurement.

The reference US Patent 2,338,001 to La Vigne concerns a micrometer screw, which no pharmacist would use to measure the thickness of a tablet or pill. The measurement is strictly mechanical, whereas the present invention employs magnetic elements. The embodiment of Fig. 1 of the La Vigne reference is unsuitable for automatic operation of measuring the thickness of tablets or pills.

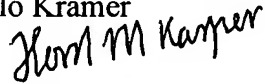
The reference US Patent 6,763,604 B2 to Jordil et al. is not suitable for measuring the thickness of tablets or pills. The whole mechanism of rolls and tapes does not correspond to the subject matter of the present invention. In addition the reference Jordil et al. does not teach a magnetic system, since the subject matter of the reference exhibits neither a magnetic sensor nor magnet poles of a magnetic strip.

Reconsideration of all outstanding rejections is respectfully requested.

All claims as presently submitted are deemed to be in form for allowance and an early notice of allowance is earnestly solicited.

Respectfully submitted,

Thilo Kramer



By:

Horst M. Kasper, his attorney

13 Forest Drive, Warren, N.J. 07059

Telephone: (908)757-2839

Telefax: (908)668-5262

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